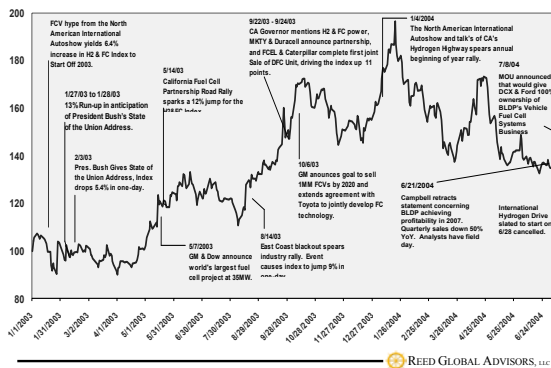


Diamond Bar, California

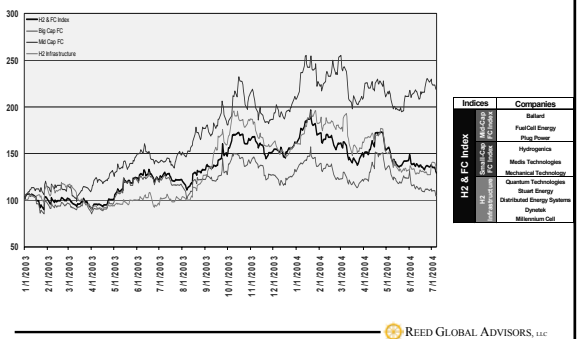
- ***Bad Big Energy Sector Macro Continues.***
 - Energy Bill, power sector Dereg, Big Oil, Clean Air Act, etc.
- ***Upswing in Energy Tech Sector Momentum.***
 - Retail investors in public equities respond
- ***Still Weak Investment Liquidity.***
 - Private markets will not fund perceived science projects
- ***What Commercial Product?***
 - \$/kW and field durability
- ***Some Positive Government Stimulus.***
 - Federal and state level commitments sprouting
- ***Information Flows Compound.***
 - Sector discusses economics more profoundly

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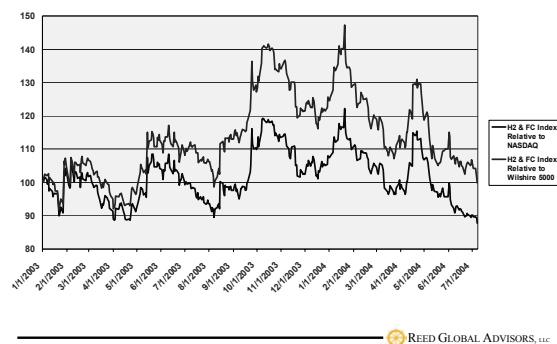
(Hydrogen Economy Index [H2&FC] Performance rebased to 100)



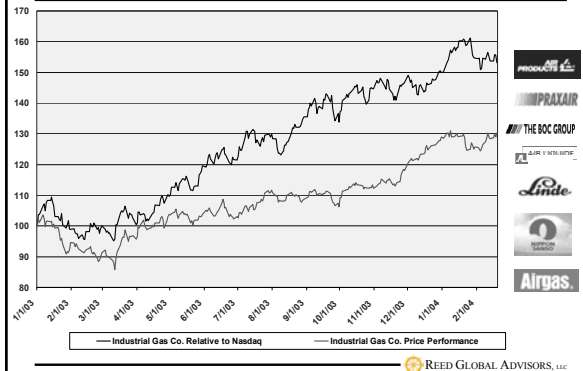
(FY03-present, rebased to 100)



(relative, rebased to 100)

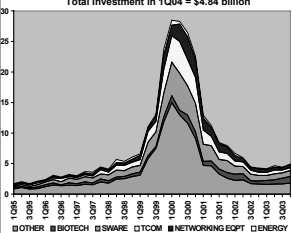


(rebased to 100)

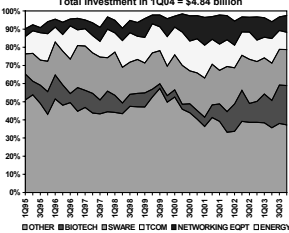


U.S. Private Investment in Select Sectors

U.S. Private Market Investment (in \$Bn by sector)
Total Investment in 1Q04 = \$4.84 billion



U.S. Private Market Investment (% by sector)
Total Investment in 1Q04 = \$4.84 billion



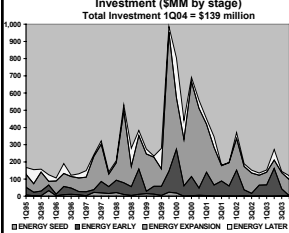
Source: PWC/TE/EN/CA MoneyTree Survey

CONCLUSION: The "smart money" continues to duck a big sector.

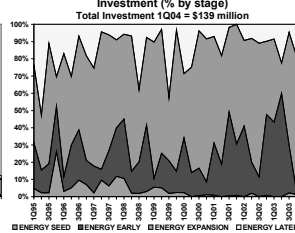
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U.S. Private Energy Investments

U.S. Private Market Energy/Industrial
Investment (\$MM by stage)
Total Investment 1Q04 = \$139 million



U.S. Private Market Energy/Industrial
Investment (% by stage)
Total Investment 1Q04 = \$139 million



Source: PWC/TE/EN/CA MoneyTree Survey

CONCLUSION: Engines of innovation squeezed as VCs must sustain old investments through multiple funding rounds. Successful exits sparse.

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Recent High Visibility Deals

Date	Company	Country	Amount (US\$MM)	Transaction	Investors	Private or Public	Technology
18/2003	Greenlight Power	USA	\$19	Acquisition	Hydrogenics	Public	PEM FC & Testing
10/23/2003	Quantum Fuel Systems	US	\$7	Public Offering	sale of 3.5mm common	Public	H2 infrastructure
2/28/2003	Vanderbilt Technologies	USA	\$21	Acquisition	Stuart Energy	Public	H2 infrastructure
3/25/2003	H Power	US	\$47	Acquisition	Plug Power	Public	PEM FC
5/12/2003	Intelligent Energy	UK	\$18	Private placement	VC (2nd round)	Private	PEM FC
5/22/2003	Northern Power Systems	US	\$26	Acquisition	Proton Energy	Public	H2 infrastructure
5/23/2003	Meadco Power	US	\$14	Private placement	VC (4th round)	Private	Stationary Zinc FC
7/2/2003	General Hydrogen	US	\$4	Private placement	Bruce Power (3.4%)	Private	H2 infrastructure
7/3/2003	Hoku Scientific	US	\$6	Private placement	Sanyo Electric	Private	PEM membrane
7/10/2003	Ariva Labs	US	\$6	Private placement	Chrysalis, Wall Street Tech, BCV	Private	PEM FC
8/4/2003	Global Thermoelectrics	USA	~\$9	Acquisition	FuelCell Energy	Public	SOFC
9/17/2003	Arista Labs	US	\$5	Private placement	Enterprise Partners Venture Capital	Private	PEM FC
9/23/2003	Mechanical Technology	US	\$1	Private placement	Gillette	Public	DMFC mFC
10/27/2003	Quantum Fuel Systems	US	~\$13	Public Offering	sale of 7mm common	Public	H2 storage
11/13/2003	Plug Power	US	\$50	Public Offering	sale of 11.7mm common	Public	PEM FC
12/1/2003	FuelCell Technologies	US	\$4	Public Offering	sale of 1.4mm common	Public	SOFC
1/13/2004	Media Technologies	US	\$12	Private placement	sale of 1.2mm common	Public	mFC
1/19/2004	CMR Fuel Cells	UK	\$10	Private placement	Conduit Ventures & Carlton Trust	Private	PEM FC
1/20/2004	Moltenium Cell	US	\$10	Private placement	(convertible debt round)	Public	H2 infrastructure
12/1/2004	Enert	US	\$20	Private placement	8 institutional investors	Public	Battery/FC
1/26/2004	Media Technologies	US	\$3	Private placement	-	Public	mFC
1/27/2004	Mechanical Technology	US	\$10	Private placement	Fletcher Asset Management	Public	DMFC mFC
1/29/2004	Asustek	IT	\$4	Private placement	EverTQ and Gosselin	Public	MFC
2/3/2004	Hydrogenics	USA	~\$62	Public Offering	2000, Nat'l Bank Financial, TD Securities	Public	PEM FC
2/17/2004	Stuart Energy	USA	~\$15.9	Public Offering	sale of 7mm common	Public	H2 Infrastructure
2003 - Current	Total		~\$509 million				

Source: RGA & Company

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Recent Transactions in Energy Tech: Part I

Dates	Companies	VC/Coporate Investors	Rds	Funded \$MM	Technology
3.16.04	Protonex	Conduit SAS Investors Solstice Capital Commons Capital	A	N/A	Small-scale PEMFC/DMFC
3.28.04	Vaporo	Band of Angels Kleinfelder Forum RSH Ventures	Seed	2	Capillary Force Vaporizer (CFV)
3.30.04	Servcon	El Dorado Investment Company		9	T&D monitoring software
4.02.04	P21	Cascade Pacific Management Oregon Life Sciences LLC & Management Conduit		EU6	PEMFCs
4.20.04	Oxonica	Target Partners TechFund Capital Europe CDC/ies Innovation		7	Nanocatalysts
4.27.04	Encorp	VCF Partners BASF Venture Capital GmbH Genetics Asset Management Ltd		7.11	Distributed Energy Management SW
5.11.04	Masole	Penex LLC CFC Ventures Penex LLC Arista Corp VantagePoint Venture Partners Fireflies Strategic Technology Fund Garage Technology Ventures Nippon Kasei Kasei Company Ventures Bank Group		5.4	Stainless foil PV

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Recent Transactions in Energy Tech: Part II

Dates	Companies	VC/Coporate Investors	Rds	Funded \$MM	Technology	Origin
6.04	Intelligent Energy	Proposed IPO/scrapped		GEF60 Mh	PEMFCs	UK
6.11.04	ITM Power	IPO		GEF610 Mh	PEMFC Process Technology	UK
6.11.04	Hydrogen Source	Discussion (Shell H2 and UTC)			Oxidation/reformation	Windsor, CT
6.15.04	Lynntech	Chrysalis Energy/United Partnership Bramer Energy Ventures Altera	A	5.5	FC/FC Analytics	College Station, TX
6.23.04	Konarka	New Enterprise Associates Vanguard Ventures Parsip International Prime New Energy SEI Ventures Good Energies Prestige Venture Partners	C	18	Polymer solar cells	Lowell, MA
6.25.04	Nanostellar	Frank Marshall William Miller	A	3	Pl catalyst, modeling	Menlo Park, CA
7.04	Cosmic Fuel Cells	IPO		18	Planar SOFCs	
7.06	PolyFuel	Previous Round Consortium		18.4	DMFC membranes, DMFC	Mountain View, CA
		Conduit KTS Ventures Hilling Yacuda BNEXT				

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Valuation Implications vs. Today's Reality

Company	Estimates 1/01/02		Estimates 12/31/02		Estimates 2/27/04	
	Implied Sales (US\$MM)	Implied MW Sold	Implied Sales (US\$MM)	Implied MW Sold	Implied Sales (US\$MM)	Implied MW Sold
Plug Power	408	236	158	91	333	123
Hydrogenics	215	88	102	41	237	77
Ballard Power	5,673	8,745	1,372	2,114	1,562	3,040
FuelCell Energy	1,626	2,168	736	981	627	836
Total	7,922	11,237	2,368	3,227	2,759	4,076

Source: RGA

FY03 Estimated MW Capacity Shipped and Estimated \$/kW Sales Price

	Ballard	FuelCell Energy	Plug Power
Estimated MW Capacity Shipped	15.5+	5.8	0.7
FC Product Revenue (US\$MM)	\$79.8	\$16.1	\$7.5
Estimated \$/kW	\$5,150	\$2,750	\$10,350

Source: Company & RGA

CONCLUSION: Recent valuations set by retail investors stabilize, but still look optimistic given commercialization delays. Expect future volatility.

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Mixed Bag of Expectations

Cost of H₂ Refueling Station Infrastructure

	CV	Shell
Number of H ₂ Stations	6,500 in major urban areas; 5,200 along major highways	44,000
% of proposed H ₂ stations vs. existing gasoline stations	7%	26%
Number of Vehicles Served	1 million	2% of total in 2020
Cost per station	US\$1 million for new station	US\$420,000 to retrofit existing station
Total Cost	US\$10-15 billion	US\$19 billion

Source: The Companies & DOE

CARB "Alternative Compliance Path"

Year	Max Reg'd FCVs
2005-2008	250
2009-2011	2500
2012-2014	25000
2015-2017	50000

A 100% H₂ FCV requirement due to be met with A.P. Policy

Source: CARB

Japan's FCV Goal

Year	# of FCVs
2010	50,000
2020	5 million

Source: Ministry of Land Infrastructure and Transport

DOE FC & H₂ Technology Evaluation Pathway Targets

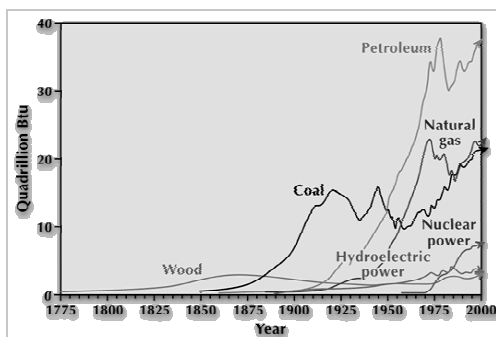
	Units	2003 Status	2005	2010	2015
FCV Durability	Hours	-	1000	2500	5000
FCV Cost*	US\$/kW	3,000+*	200	125	45
FCV R&D Durability	Hours	-	2500	5000	-
FCV R&D Cost	US\$/kW	-	125	45	-
H ₂ Cost	US\$/kg	\$5.06	\$3.00	\$1.50-2.10	\$1.50

*Projection based on 600,000 unit production

**R&D estimate for low production

Source: DOE
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Not Going Anywhere for a While?

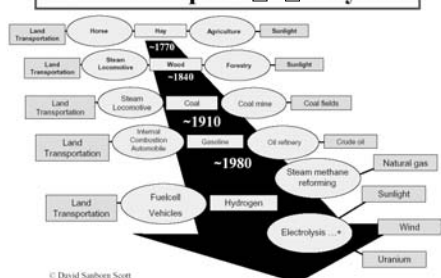


Source: unknown

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Still Not Going Anywhere for a While?

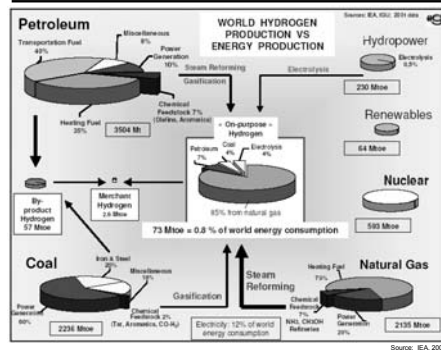
Land Transport: ~70 years



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Hydrogen in the World Today

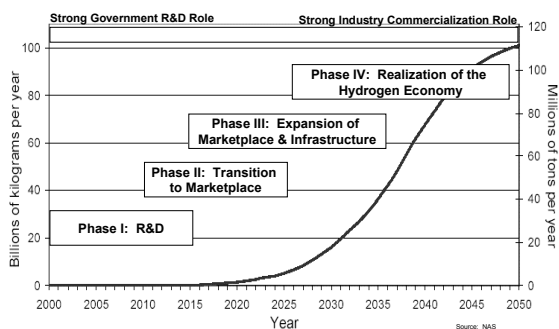


N.B. 73 Mtoe is roughly equivalent in energy to the amount of electricity consumed by 65,000,000 U.S. households annually or 18% of U.S. gasoline consumption in 2002.

Source: IEA, 2001

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Hydrogen-Technology Diffusion Curve



Source: NAS

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Current Hydrogen Statistics

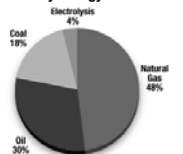
Hydrogen Production Facts

U.S. H ₂ Production via Steam Methane Reforming ¹	95%
% of H ₂ consumed on-site ²	95%
US Annual H ₂ Production ¹	90 billion m ³

¹ DOE, 2003

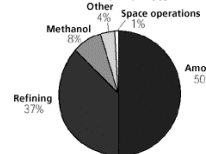
² Air Products

Global Hydrogen Production by Primary Energy Source



Source: DOE

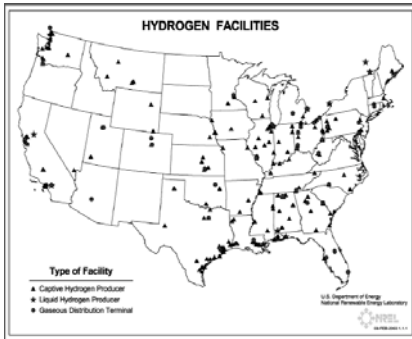
Global Hydrogen Use by End markets



Source: Bellona

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Existing U.S. Hydrogen Production Capacity



U.S. Captive Production:
~10 trillion scf of hydrogen
~2.75 quadrillion BTU
~808 TWh

U.S. Merchant Production:
~610 billion scf of hydrogen
~167.75 trillion BTU
~49.16 TWh

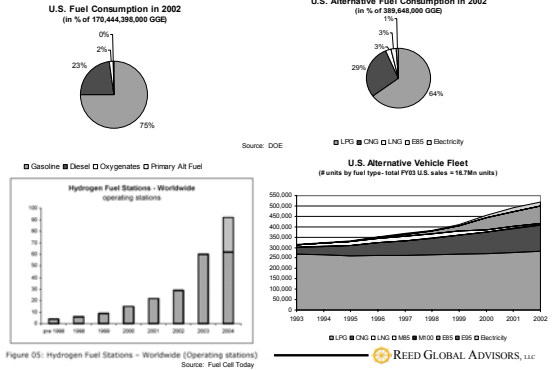
U.S. Captive Cost:
\$1.67-\$1.83/kg with
\$5.00/MMBtu natgas

U.S. Merchant Cost:
\$7.2-\$11.00/kg cylinder gas
\$0.8-\$3.4/kg pipeline gas
\$4.9-\$7.6/kg liquid hydrogen

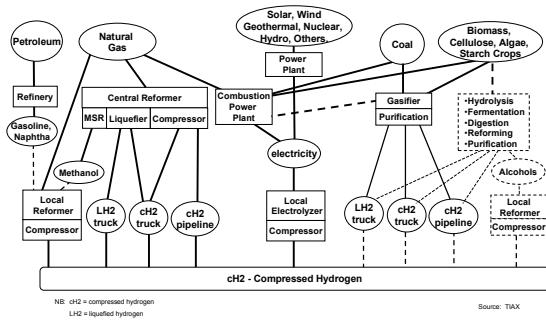
Industrial market is growing, but moderately.
Refining demand to grow by at least 33% by 2006 to meet low sulfur regulations. Capacity expanding rapidly in Gulf Coast states.

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U.S. Transportation Market Opportunity

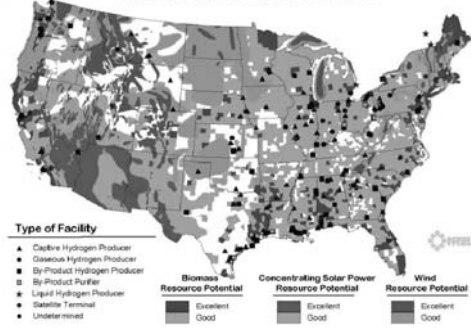


H2 Production: Choose Your Own Adventure



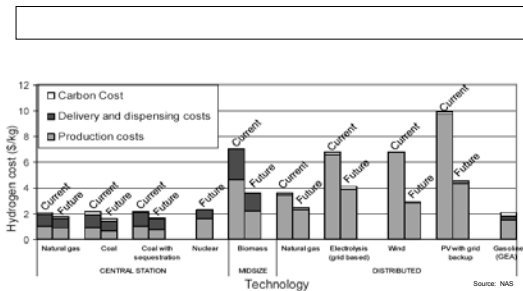
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HYDROGEN FACILITIES AND GOOD TO EXCELLENT RENEWABLE ENERGY RESOURCES



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Delivered Costs of Hydrogen

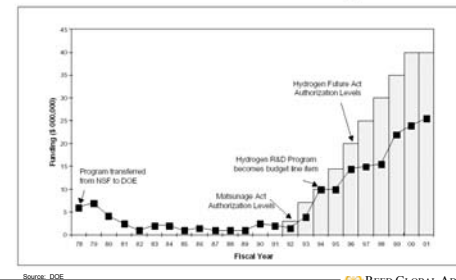


• GEA = Gasoline Efficiency Adjusted – scaled to hybrid vehicle efficiency

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Federal Funding Momentum

H₂ Hydrogen R&D Program Historical Funding



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Beginnings of a National Strategic Initiative?

2005 Federal Budget Proposal

Program	Budget Proposal
Hydrogen & Fuel Cell	US\$228MM
President's Coal Research Initiative	US\$635MM
Fusion	US\$264MM
Environmental Management Program	US\$7.4B+
Weapon Activity	US\$6.6B
Nanoscience	US\$209MM

Federal Government Funding for H2 & FC Economy

Region	FY02	FY03	FY04	FY05
USA	US\$76MM	US\$97MM+	US\$159MM	US\$228MM*
JAPAN	US\$91MM	US\$145MM	US\$197MM*	?

Major Past Federal Programs

Project	Cost	Time
Apollo	US\$25.4MM	10
Federal Highway System	US\$130MM	47

CONCLUSION: Energy security will cost more than \$1.7 Billion over 5 years.

Notes

- Investment liquidity in energy technology is extremely fragile due to opaque energy policy, lack of demand push, and dearth of successful investment exits. Early stage ventures, the "engines of innovation," suffer unduly. Government can create market push necessary to attract private capital with effective, long-term policymaking resulting in clear price signals.
- SDTC fund of Canada and Green Wave Initiative of CA looking for a few good projects.
- CA H2 Highway- is it about 200 hydrogen refueling stations by 2012 or about laying the foundation for long-term energy sustainability? Sustainability includes transparent policy that attracts private investment flows and does not depend on the charity of Big Oil, the Big Three, or Big Utilco.
- Is the call for an Apollo Energy Project real?



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